

ABSTARCT OF THE DISCLOSURE

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Patterned platelets are platelets made with specified shapes and sizes. The various sizes and shapes of the platelets are used to code articles and substances to which they are applied. The patterned platelets can be in inks or paints applied to articles. The platelets can be further coded by markings thereon or by spectral or polarization codes rather than just the distribution of sizes and shapes. The patterned platelets can be made from any materials buy subtractive or additive processes. A patterned platelet can also be made by an actinic polymer being applied to a substrate and a mask applied to allow only the desired size and shape to be exposed to radiation curing the unmasked portion of the polymer on the substrate. The polymer can be cholesteric liquid crystals with the properties of reflecting polarized light of selected wavelengths to code the crystals in addition to the size and shape codes. The cholesteric liquid crystals may also be doped with materials which absorb a portion of the wavelengths which would otherwise be reflected further coding the patterned platelets. Codes of the patterned platelets can be composed of the distribution of the platelets alone or in combination with the position of the platelets on an object. A code with the presence or absence of a specified patterned platelet in a specified location could be a binary code. If n different patterned platelets are used in each of x positions a code with x to the n th power combinations is possible.